

MARCH 1987

Pension World

The Magazine for Plan Sponsors and Investment Managers/ A Publication of Communication Channels, Inc.

Computer Technology for the Pension Industry

Are Transaction Costs Too High?

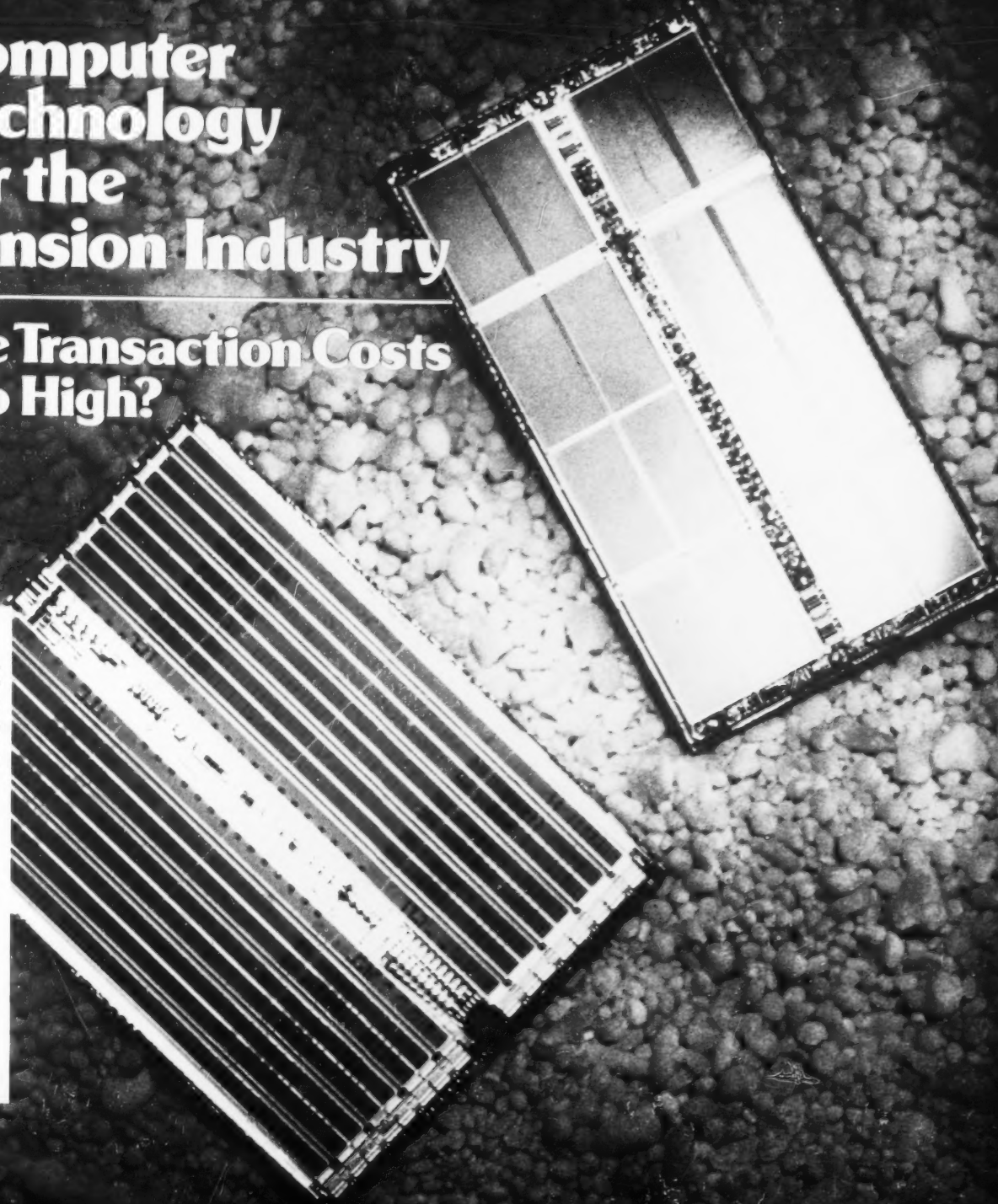
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Volume 23 Number 3

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Cover: Megabyte chips such as these provide the horsepower behind today's computer systems. Photo courtesy of IBM.

Pension World is published monthly by Communication Channels, Inc. George E. Fowkes, Chairman of the Board; B.J. Kotsher, President; Scott Smith, Secretary; Buford Bryant, Treasurer. Editorial and advertising offices at 6255 Barfield Road, Atlanta, GA 30328. Telephone (404) 256-9800. Telex 4611075COMCHAN. Pension World is a registered trademark of Communication Channels, Inc. 1987 by Communication Channels, Inc. Second class postage paid at Atlanta, GA, and at additional mailing offices. Subscription rates U.S., 1 year, \$41; 2 years, \$68. Canada and Mexico, 1 year, \$44. Overseas Sea Mail, \$59. Overseas Air Mail, \$81. Single copies, \$3.50. Group rates available. The opinions expressed by authors and contributors to Pension World are not necessarily those of the editors or publisher. Articles appearing in Pension World may not be reproduced in whole or in part without the express permission of the publisher. Microfilm copies of Pension World are available from University Microfilms, 300 North Zeeb Road, Ann Arbor, MI 48106. Postmaster: Please send form 3579 to Circulation Department, Pension World, 6255 Barfield Road, Atlanta, GA 30328.

BPA
ISSN 0098-1753

Money managers predict the future!

What do money managers think investments will return over the next five years?

by **ELVA B. FERRARI**
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Pittsburgh, Pa.

Consulting organizations periodically survey the so-called "smart money" for investment insights. Because of current market concerns, the Butcher Consulting Group decided to poll portfolio managers regarding their respective market return forecasts. Our view was that five-year projections will have a higher degree of usefulness than either one-year or very long-term projections. Importantly, the projections can provide planning benchmarks for fund sponsors making the asset mix decision.

We surveyed over 35 money managers. The 20 managers who provided usable risk and return projections included major banks and insurance companies, and mid-size to large investment advisors. Assets under management range from \$500 million to over \$40 billion. We requested five-year annualized market return projections for six asset classes:

- large capitalization stocks (S&P 500);
- small capitalization stocks (NASDAQ);
- international equity (EAFE—Europe, Australia, Far East Index);

Table 1 Summary of Asset Class Projections 1987-1991 Performance and Risk

	Range (%)		Median (%)		No. Responses
	ROR	SD	ROR	SD	
S&P 500	8.0-15.3	13.0-23.0	11.0	16.7	18
NASDAQ	9.0-17.0	14.0-25.0	12.0	19.1	12
Int'l. Eq.	6.0-17.5	15.0-20.7	11.8	16.9	13
Real Estate	4.0-12.0	8.0-18.0	8.0	13.5	10
Bonds	6.0-13.5	5.0-15.0	8.4	10.0	10
T-Bills	3.5- 7.0	0.9- 5.0	6.0	2.7	19
C.P.I.	3.0- 6.0	N/A	4.0	N/A	19

ROR = Annualized total return per year

SD = Annual standard deviation of total return per year

Table 2 Asset Class Performance: Past vs. Projected (Annualized Total Returns)

	1987-1991 ¹	1961-1985	1976-1980	1961-1987 ²
S&P 500	11.0%	14.6%	13.9%	9.5%
NASDAQ	12.0	9.9	11.0 ³	N/A
Int'l. Eq.	11.8	15.8	17.0 ³	N/A
Real Estate	8.0	12.7	N/A	N/A
Bonds	8.4	16.2	2.5	5.9 ³
T-Bills	6.0	10.2	7.7	8.5
C.P.I.	4.0	4.8	9.2	5.3

¹Median projection

²Estimated

³Source: CDA Investment Technologies, Inc.

- diversified equity real estate;
- bonds (Shearson Lehman Government Corporate Bond Index); and
- Treasury bills.

Respondents also were asked to supply projected risk levels in the form of yearly standard deviations and an inflation forecast as measured by the Consumer Price Index (CPI).

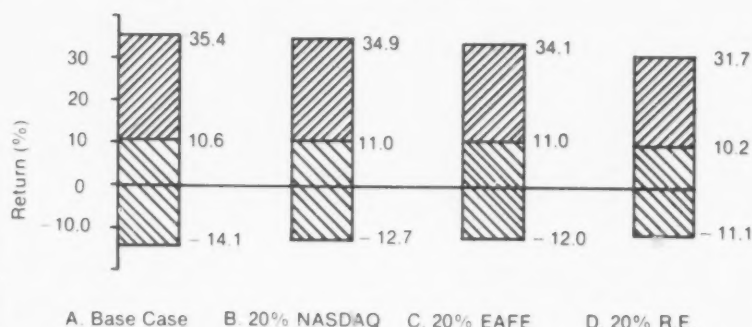
Survey results

Table 1 summarizes the responses. The high-low response ranges were quite wide. Yet the median (and arithmetic mean) responses were typically close together, suggesting a normal distribution. From a performance-only perspective, NASDAQ equities should be the favored class of equity. The median projected return is 12.0 percent. International equities are a close second (11.8 percent), followed by the S&P 500 (11.0 percent). Equity real estate and bond expectations fall to single digit levels. The CPI projection is for a moderate four percent inflation. T-Bills are projected to offer a two percent real return. Standard deviations of the three common stock classes are all absolutely high—17 to 19 percent. Recognizing the small number of real estate responses, the standard deviation of this asset class is remarkably high, i.e., 13.5 percent; respondents assumed that real estate return variability would be a function of market conditions, rather than merely appraised values. Finally, T-Bill return deviation is a low 2.7 percent.

In the context of the recent and long-term past, this group of respondents is moderately optimistic about equities, bonds, inflation and real return. They are relatively pessimistic about real estate. Table 2 displays the current projections, together with performance for three historical periods. Bull market performance for five years ending 1985 clearly exceeded most of the current projections. S&P, EAFE, T-Bills, and the CPI also exceeded the current projections during the 1976-1980 high inflation period. Projections for both stocks and bonds exceed the 25-year historical returns by approximately two percent. CPI projections are one percent lower, while T-Bill returns are similar to the 1961-1985 period.

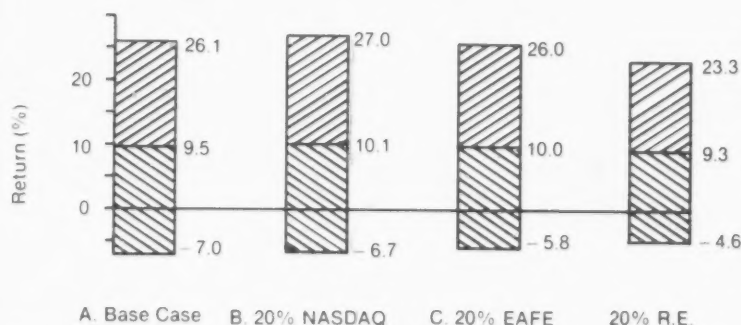
Given these projections, what

Table 3 Diversification in an Equity Portfolio
Range of Possible Returns at 90% Probability



These are the high, median and low returns expected for an equity portfolio whose "base case" (A) consists of 90% S&P 500 stocks and 10% Treasury bills. In this hypothetical example, the portfolio is diversified by the addition of 20% small capitalization stocks (Case B), 20% international stocks (Case C) and 20% real estate (Case D).

Table 4 Diversification in a Balanced Portfolio
Range of Possible Returns at 90% Probability



These are the high, median and low returns expected for a balanced portfolio whose "base case" (A) consists of 50% S&P 500 stocks, 40% government and corporate bonds and 10% Treasury bills. In this hypothetical example, the portfolio is diversified by the addition of 20% small capitalization stocks (Case B), 20% international stocks (Case C) and 20% real estate (Case D).

would happen to a sponsor's portfolio if these returns became a reality? We decided to find out. We applied our proprietary computer simulation program, "MIX & MATCH," to a variety of "what if" scenarios. The median risk and return responses (presented in Table 1) for all six asset classes became key model inputs. Correlation coefficients (r^2) between pairs of asset classes were also required for the model. In our judgment, r^2 does not radically change over time. Therefore, we employed the latest 12-year correlations.

Starting separately with an equity portfolio (90 percent S&P, 10 percent T-Bills) and a balanced portfolio

(50 percent S&P, 40 percent bonds, 10 percent T-Bills), we introduced additional asset classes in small increments. To be realistic, NASDAQ, EAFE, and/or equity real estate components were capped at 20 percent.

Table 3 displays the potential risk and return impact of diversifying an equity portfolio. Starting with 90 percent S&P, 10 percent T-Bills (Case A), we modeled a 20 percent diversification into small capitalization equities (Case B), international equities (Case C) and real estate (Case D). At first glance, the results are not startling. Return is marginally improved by diversifying into

Continued on page 42

short futures position, helping to offset losses in the equity portfolio. To refine the hedging process, the number of contracts sold could be adjusted by the portfolio's beta relative to that particular index. If the portfolio's beta were 1.2 relative to the S&P 500, for example, then the number of contracts sold would increase to 384 (1.2×320).

Hedging by selling stock index futures is particularly valuable when the underlying securities are still fundamentally attractive or insufficiently liquid. The manager is able to maintain his holdings while protecting the portfolio from market risk and avoiding the negative self-impact of selling one's own stocks. Using index futures to reduce equity exposure, of course, does not eliminate the necessity of selling a holding whose fundamentals have become negative or unattractive.

Other uses

The use of stock index futures for asset allocation decisions can be especially useful when market conditions change abruptly and rapid execution is of prime importance. In addition, plan sponsors who have a

number of investment managers may avoid disrupting those managers by maintaining a separate account consisting primarily of cash, stock index futures or bond futures. This balancing account may be used to alter asset mix levels without involving or impacting their investment managers.

Because a theoretical fair value can be determined for a futures contract, an analysis must be made at the time of execution to avoid selling undervalued contracts or purchasing overvalued contracts.

Contract specifications and terms of settlement are different from those for trading stocks. At the time the position is established, a small good-faith deposit, usually in the form of Treasury bills, is required. Positions are subsequently marked to market daily, which can result in cash flows into or out of the account.

Use of stock index futures to implement asset allocation decisions, therefore, increases investment flexibility due to excellent liquidity and reduces transaction costs compared to trading an equivalent dollar amount of equities. Over time, the

cumulative transaction cost savings may be significant. Therefore performance results may be increased dramatically as well. □



Photo 1986 by Allen Ma Weeney

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Money managers

Continued from page 39

NASDAQ or international stocks. In both instances, the standard deviation or range of returns is also modestly reduced. Return decreases marginally by adding equity real estate. However, a 20 percent real estate component does reduce risk compared to the other scenarios.

Similar results for a balanced portfolio appear in Table 4. Base Case A is represented by 50 percent S&P, 40 percent bonds and 10 percent T-Bills. By diversifying into NASDAQ or EAFE, projected return increases from 9.5 percent to approximately 10 percent. Real estate diversification reduces both return and risk.

The projected risk and returns for the three equity classes (large capitalization, small capitalization and international) are comparable. The projected risk level for equity real estate is significantly higher than its historical level. The major implication, therefore, is that there appears little to be gained from diversifying into less traditional investment vehicles.

"... the most important asset mix decision is the equity allocation . . . Particularly for sponsors of smaller-sized funds, there appears to be no immediate need to diversify into less traditional investments."

Based on our survey projections and the model output, the most important asset mix decision is the equity allocation. Large and small capitalization domestic equities, as well as foreign equities, are all projected to earn double-digit returns (with similar risk). Therefore, a decision among these equity options is less significant. Particularly for sponsors of smaller-sized funds, there appears to be no immediate

need to diversify into less traditional investments. In fact, smaller-sized funds could suffer a negative impact from increased fees, reporting costs, additional monitoring and surveillance needs, etc. □



Elva B. Ferrari is a vice president of Butcher & Singer, Pittsburgh. She joined the Butcher Consulting Group seven years ago. Her responsibilities include consulting on pension and investment matters to plan sponsors in the private and public sectors as well as endowments and foundations. She holds a B.S. from the University of Pittsburgh.